

100T-4 '88

EP 1.73/9:600/8-85-021

United States
Environmental Protection
Agency

EPA/600/8-85/021
Sept. 1985

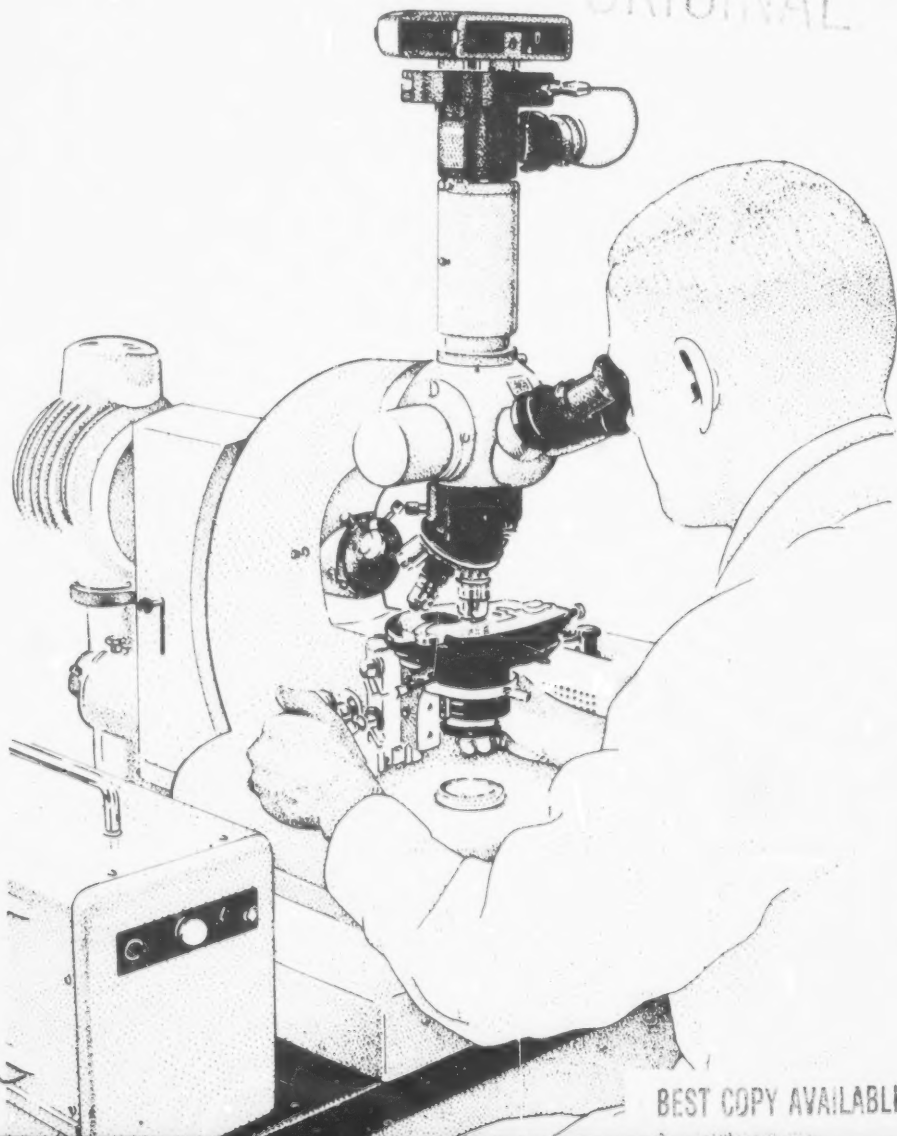
Research and Development



Solicitation for COMPLETED Research Grant Proposals

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Exploratory Research Grants

Introduction

The Environmental Protection Agency (EPA) carries out a series of laws designed to keep environmental pollutants from adversely affecting human health or environmental quality. The specific decisions on how best to accomplish these mandates require that a series of complex scientific, technical, economic, and political judgments be made. The complexity of the environment makes it apparent that solutions to environmentally-related problems often require more basic or fundamental research than would normally be expected in response-directed research programs. A primary goal, therefore, of EPA's Office of Research and Development (ORD) is to develop new knowledge and principles which can be used to address and resolve environmental problems. This year ORD is particularly interested in research to address the following areas:

- developing methodology for the assessment and control of complex pollutant mixtures in air pollutants, wastewater effluents and hazardous waste.
- improving risk assessment methodology to accurately measure hazards of chemicals and toxicants to public health.
- evaluating health and environmental effects of genetically altered organisms in the environment.
- determining the effects of acid rain on forests, crops, receiving waters and their biota.

Consequently, ORD supports environmentally related research, development, and demonstration efforts through its headquarters office in Washington, DC, and its laboratories throughout the United States. In addition to work conducted in its own facilities, EPA sponsors research elsewhere in the scientific and academic community—through cooperative agreements, negotiated contracts, and research grants.

This solicitation relates only to the research grants procedures as administered by the ORD's Office of Exploratory Research. Grants are an important means by which EPA underwrites research on environmental topics in the academic sector. This document discusses research areas of interest to EPA and the procedures for applying for such grant assistance. Participation in the research grants assistance program does not preclude individuals or institutions from engaging in EPA-sponsored research supported through cooperative

agreements or contracts with ORD laboratories. Those interested in these aspects of EPA's research and development programs are encouraged to consult directly with officials at the EPA laboratories. A list of these laboratories appears in Appendix A.

This solicitation describes the principal areas of interest and specific research needs and topics of the exploratory research grants assistance program. The principal areas of interest are:

- Environmental Biology
- Environmental Health
- Environmental Engineering
- Environmental Air/Water Chemistry and Physics

Although this document emphasizes certain needs in the aforementioned research areas, it is by no means all inclusive. Every scientifically meritorious proposal will be accorded full and fair consideration. The legislative and administrative limitation of this program require, however, that applications must be germane to EPA's mission.

Application Procedures

Application forms, instructions, and other pertinent information are available in the EPA Research Grant Application/Information Kit. It is recommended that interested investigators review the material in this kit before preparing an application for assistance. The kits are available from:

Grants Operations Branch
Grants Administration Division (PM-216)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

or

Research Grants Staff
Office of Exploratory Research (RD-675)
Office of Research and Development
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Fully-developed research proposals, prepared in accordance with instructions in the application for Federal Assistance Form No. 5700-12, should be sent to:

Grants Administration Division (PM-216)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

A pre-addressed mailing label is provided in the Application/Information Kit.

If this solicitation is the basis for submitting a proposal, the fact may be entered on line 3 of Form 5700-12.

One copy of the application with original signatures plus nine copies are needed. Informal, incomplete, or unsigned proposals will not be considered.

There are no deadlines for submitting research grant applications. Proposals will be evaluated, however, at regular (approximately semi-annual) intervals (see table below). Applicants should contact the appropriate Science Review Administrator, whose name appears at the end of each subject area description, for dates of the next scheduled peer review panel meetings.

<i>Solicitation Publication</i>	<i>Application* Closing Date(s)</i>	<i>Panel Review Meeting</i>	<i>Relevancy Review</i>	<i>Earliest Date for Notification of Award</i>
<i>September</i>	<i>Feb. 15th</i>	<i>Apr./May</i>	<i>June/July</i>	<i>August</i>
<i>(Selected program announcements issued as needed.)</i>	<i>Aug. 15th</i>	<i>Oct./Nov</i>	<i>Dec./Jan</i>	<i>February</i>

**While applications are accepted year round, to be considered by a specific review panel, applications should be received no later than six weeks prior to the scheduled review meeting date.*

Both are 7 month cycles.

Eligibility

A research grant application will be considered when a fully developed proposal is submitted on the required Application for Federal Assistance Form 5700-12, provided that

- The proposed project is for research (as opposed to development, demonstration, surveying, or preparation of materials and documents),
- The proposed project directly pertains to EPA's mission,
- The proposed project should address fundamental aspects of environmental problems,
- The applicant is eligible to apply under the Federal laws that authorize EPA to award research grants.

Nonprofit institutions and state or local governments are eligible under all existing authorizations. Profit-making firms are eligible only under certain laws, and then under restrictive conditions, including the absence of any profit from the project.

Potential applicants who are uncertain of their eligibility should study the restrictive language of the law governing the area of research interest. This information is provided in the Research Grant Application/Information Kit. All applicants must provide a minimum of 5% of the total project cost. These cost-sharing funds may not be taken from other Federal sources.

Investigators at minority institutions and those who have not previously received support are encouraged to submit applications (See Special sections).

Review Process

All applications will initially be reviewed by the Agency to determine their legal and administrative acceptability.

Acceptable applications will then be reviewed by appropriate peer review panel(s). This review is designed to evaluate and rank each proposal according to its scientific and/or technical merit as a basis for recommending Agency approval or disapproval. Each peer review panel is composed primarily of non-EPA scientists who are acknowledged experts in their respective disciplines.

The panels use the following criteria in their review:

- Quality of research plan (including theoretical and/or experimental design, originality, and creativity)
- Qualifications of principal investigator and staff including knowledge of subject area
- Potential contribution to scientific knowledge
- Availability and adequacy of facilities and equipment
- Budgetary justification

Proposals which receive a panel's approval based upon scientific merit are further evaluated by EPA officials for relevance to the Agency's missions and budget appropriations. It is iterated that scientifically approved applications must be germane to EPA's mission to be funded. A summary of the scientific review and recommendation of the panel(s) will be provided each applicant.

Applicants recommended for approval are notified of the results of the funding decision as soon as possible.

Exploratory Research Grants

Environmental Biology

The objectives of the Environmental Biology Research Program are to gain a better understanding of the mechanisms through which pollutants affect ecosystem processes and to develop better biological end-points to monitor and evaluate individual, population and ecosystem effects. This knowledge is desired in order to provide a scientific basis for making regulatory decisions and to implement abatement control strategies.

Areas of interest include but are not limited to:

● Ecological Processes

- The cycling, including sorption/desorption, of pollutants and biodegradation products with long time constants in biological systems and ecological processes.
- The relationship of ecological genetics and natural selection processes as they are influenced by the impact of pollutants upon ecosystem properties.
- The differential importance of components of ecosystems to the whole. Studies are solicited which assess the vulnerability of ecosystem components to natural and anthropogenic damage and the relative ability of the ecosystem to recover.
- Modeling studies to develop new qualitative and quantitative methodologies for environmental applications to ecological and microbiological processes in order to predict pollutant effects.
- Studies of pollution impacts on biotic resources in cold-climate ecosystems including the tundra and estuarine areas. Of particular interest are proposals to study problems related to the environmental impact of energy and resources development in Alaska, such as mining, oil and gas development, and logging.

● Ecological and Toxicological Effects

- Studies delineating the effects of gaseous and particulate air pollution (e.g., acid rain) on forests, crops, and receiving waters and their biota.

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- Studies to examine the mechanisms by which major pollutants combine to alter plant growth and produce pathological symptoms in plants.
 - Studies on the sublethal effects of toxic chemicals and their biodegraded products on the behavior of animals.
 - Effects of chemicals on wildlife, including effects on populations and individuals.
 - Ecological significance of the loss, due to exposure to toxic chemicals, of a portion of a natural population.
 - Modes by which organisms (i.e., fish, algae and plants) are exposed to chemicals in freshwater and marine sediments.
 - Studies defining the role of bacteria in the movement, transfer and destruction of pollutants in soil and water.

● Ecological Risk Assessment

- Techniques that will permit testing and validation of laboratory findings and model verification under field conditions especially in the areas of biological availability and effects of contaminants.
- Determining the pathways, interactions, and impacts of genetically engineered microorganisms which enter environmental systems. Of particular interest are applications for environmental monitoring and ecological risk assessment.
- Screening methods for predicting exposure, fate and eco-toxicity of chemicals, including chemical mixtures at low concentrations. The development of systems and models (including the structure-activity concept) through which persistence, bioaccumulation, eco-toxicity, and biodegradation may be predicted.

For further information, please contact:

Clyde C. Bishop, Jr.
Science Review Administrator (RD-675)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460
(202) 382-7445

Environmental Health

The objective of the Environmental Health Research Program is to obtain and provide a scientific basis upon which the Agency can make regulatory decisions concerning the protection of human health from environmental pollutants. The principal concern is to determine whether, and to what extent, environmental exposure to various pollutants contributes to health problems.

Areas of interest include but are not limited to.

- **General Areas of Research**

- Interdisciplinary studies of chemical, physical, and microbial agents, the agent's route and fate in the organisms, and also the effects on the whole organism as well as the target organ.
- In vivo* and *in vitro* studies for developing and validating rapid, reproducible, and sensitive screening tests that can be used to assess potential toxicity.
- Long-term studies of chronic, low-level exposure to pollutants and the subsequent incidence of immunotoxicity and chronic diseases including neurological and cardiovascular disorders, chronic bronchitis and emphysema, renal disease, arthritis and cancer.

- **Improved Models and Methodologies for Risk Assessment and Pertinent Data Bases**

- Studies directed toward improved extrapolations from high-to-low doses and from animal models to humans.
- Development of human assays of toxic exposure including biochemical, behavioral, and neural effects.
- Development of more extensive *in vivo* and *in vitro* assays for all classes of potentially toxic chemicals considered relevant to humans at risk.
- Studies of pharmacokinetics to determine the body burden and effects of ingested and otherwise contacted chemical and physical toxic agents.

- **Toxic Agents**

- Studies that define the rates and mechanisms of chemical reactions at the cellular level of important toxic agents in the environment.

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- Development of more sensitive techniques for measuring chemical and physical toxic agents and their metabolites in biological media.
 - Studies to identify the potential routes of exposure in biological systems to chemical and physical toxic agents, and the possible different toxicities manifested following exposure by these diverse routes.
 - Studies of multiple exposure models to determine possible synergistic, additive, and antagonistic effects of toxic agents.
 - Studies to explore the health effects of stratospheric ozone depletion and increased UVB radiation—investigations. Specific studies could focus on identifying the mechanisms of action whereby UVB radiation may affect the human immune response system; or determining with greater precision the action spectrum for the induction of nonmelanoma skin cancers (i.e., basal cell and squamous cell carcinomas).
- Studies Concerning Populations
 - Studies that concentrate on the effects (other than mortality such as genotoxicity, behavior impairment, etc.) of pollutants on populations.
 - Identification of and effects on target populations at risk from exposure to toxic agents.
 - Development of biological markers in populations to improve early detection of exposure and future chronic diseases, and to estimate their sensitivity vs. specificity.
 - Studies Concerning Individuals
 - Studies to determine the adverse effects of environmental toxicants on the immune function, and ways to enhance immune response.
 - Studies to determine the effect of predisposing factors (e.g., genetic, hormonal, nutritional factors, biological rhythm, previous exposure, disease state, etc.) on reaction to toxic agents.

For further information, please contact:

George R. Simon, Ph.D.
Science Review Administrator (RD-675)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460
(202) 382-7445

Environmental Engineering

The Environmental Engineering Research Program reflects Agency research activities in multimedia (solid, liquid, gaseous) pollution control approaches. This includes emissions reduction/control processes associated with hazardous material and energy production, conservation, increased efficiencies, recycle, and reuse.

Areas of interest include but are not limited to:

- Fundamental mechanisms in drinking water and municipal and/or industrial wastewater treatment and pollution control:
 - Reaction kinetics and by-products identification of alternatives to chlorins.
 - Improvements in sludge digestion and gas production.
 - Sludge stabilization, dewatering, and thermal processing, including disposal in the marine environment.
- Development of innovative new technology in drinking water and municipal and/or industrial wastewater treatment and pollution control:
 - In-plant unit process operations minimizing or eliminating toxics generation and release to the environment.
 - Groundwater decontamination.
 - Production of genetically engineered organisms for degradation of toxic and/or hazardous wastes in contaminated water, ground water, and sediments and for improving biological treatment.
- Development of predictive techniques for the treatability and release of and exposure to toxic chemicals and asbestos.
- Development of rapid, cost effective biomonitoring techniques for water supply and wastewater treatment systems.
- Innovative residuals control
 - Municipal water and wastewater sludge volume reduction and final disposal practices which lower concentrations of pathogens, parasites, heavy metals, and synthetic organics; recovery techniques for metals from industrial sludges.

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- Handling and disposal of hazardous solid wastes, including detoxification, solidification, and otherwise fixing organic waste before disposal in secure landfills.
 - Improved landfill construction methods and materials and improved monitoring methods.
 - Clean-up techniques (e.g., *in-situ* treatment) for contaminated soils, structures, surface and ground-water, and asbestos.
 - Improved thermal destruction (incineration) or other treatment techniques, e.g., biological or chemical, for the final disposition of hazardous materials.
 - Air pollution control technology exploratory research
 - Innovative techniques to control and/or remove toxic air emissions and VOC from industrial and/or combustion sources, including vent and flue gases.
 - Simultaneous control of particulate matter, NO_x , and SO_x in combustion and/or post combustion processes.
 - Innovative approaches for reduction of indoor air pollution.
 - Innovative controls to reduce hazardous emissions from residential wood burning.
 - Control of VOC from fuels.
 - Continuous techniques for monitoring stack emissions and volume flow rate.
 - Improved techniques for capture of particles less than 10 micrometers for retrofit applications.
 - Low cost capture of condensation aerosols, in retrofit applications, prior to existing stack.
 - Low cost fugitive emission control systems for open sources.
 - Monitoring methods for specific hydrocarbons emissions, including flares and fugitive emissions.
 - Fundamental thermal destruction/combustion research: leading to less pollutant production and to better incineration of hazardous waste.
 - Flame reactions, propagation, and quenching mechanisms.
 - Fundamental investigation of combustion processes as related to incineration of hazardous wastes.
 - Investigation of selective and non-selective catalysts for control of NO_x and organic particulate matter in high temperature combustion processes.

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- Predictive models for products of incomplete combustion in hazardous waste incineration.
 - Rapid response on-line analyzers for POHC's and PIC's.
 - Combustion phenomena capable of inducing hot rich core in fossil fuel burners for NO_x control.
 - Metal oxide based sorbents for SO_2 in high temperature slagging combustors.

For further information, please contact:

Donald F. Carey, B.S. Ch.E.
Science Review Administrator (RD-675)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460
(202) 382-7445

Environmental Air/Water Chemistry and Physics

The objectives of the Environmental Air/Water Chemistry and Physics Research Programs are to develop, improve, and test the theories and concepts on which the methods, tools, and models required for environmental protection decisions are based. Of primary concern are new or improved concepts of extracting, concentrating, identifying, and quantifying trace amounts of organic and inorganic chemicals in complex environmental samples; the scientific understanding of the basic processes by which pollutants are transported, transformed, degraded, or otherwise distributed in (air, water, soil) environmental media; new or simplified concepts for quantitatively characterizing natural environments so that model representations preserve the structure and the functional relationships essential in predicting the fate and impact of toxic and hazardous chemicals; and new concepts for predicting the fate and effects of chemicals based on molecular structure.

This program is divided into:

- I. RESEARCH ON AIR POLLUTION.***
- II. RESEARCH ON POLLUTION OF FRESHWATER, MARINE/ESTUARINE WATERS, GROUND-WATERS, SOILS AND SEDIMENTS.***

Areas of interest include but are not limited to:

I. AIR POLLUTION

- Studies on acid rain: its formation, sources, distribution, climatic and atmospheric dynamics, and other physical factors conducive to the creation and transport of acidic substances in air particulates and in aqueous droplets.
- Studies of the physical structure and chemical composition of fine particulates that contribute substantially to widespread visibility reduction. Studies on how these particulates are formed, transported, and removed from the atmosphere.
- Studies on ozone formation in the atmosphere involving complex photochemical reactions of volatile organic compounds and nitrogen oxides.

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- Studies on the collection and analysis of fine or inhalable particulates with emphasis on carbonaceous materials.
 - Studies on meteorological processes, in particular deposition phenomena, which figure prominently in the loss terms of mathematical models of air pollution.
 - Studies on potentially hazardous indoor air pollutants including radon and asbestos from all sources. Research should determine the species and ranges of exposure concentrations for statistically significant samples of various indoor settings.
 - Studies of the chemical and physical transformations of specific toxic and hazardous compounds (and their intermediates) in ambient air. Studies should include the elucidation of chemical mechanisms as well as focus on novel measurement methods for identifying these compounds in ambient air.
 - Development of models capable of quantifying pollutant concentrations or deposition rates over urban, mesoscale and large areas (such as acid rain, regional oxidants, inhalable particulates and other models). Probabilistic modeling of atmospheric phenomena will be emphasized.
 - Improved methods for evaluating and comparing performances of air quality simulation models. Emphasis will be placed on development of evaluative techniques that employ formal statistical procedures.
 - Continued development and refinement of receptor model techniques for estimating the concentrations of ambient particulates attributable to specific sets of emission categories. Development of new receptor model techniques as well as improved measurement methods in these models is encouraged.
 - Development of reliable models for predicting ground based pollutant concentrations in complex terrain from single and multiple sources.
 - Assessment and quantification of the role of solid aerosols in atmospheric reactions. This subject should be studied to determine the role of solid aerosols in air pollution chemistry.
 - Development of instruments or devices for continuous and discontinuous sampling of inhalable particulates, for volatile organic compounds, for exposure monitoring and/or for indoor air pollution studies.

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- Development of methods for the direct analysis of organic compounds in the gaseous and solid phases, for the rapid screening of samples for the presence of classes of organic compounds, and for the development of new sensitive and selective detectors for gas and liquid chromatography.
 - Studies to assess whether antropogenic emissions into the atmosphere have a significant effect on local or global climate.

For further information, please contact:

Louis G. Swaby, Ph.D.
Science Review Administrator (RD-675)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460
(202) 382-7445

II. RESEARCH ON POLLUTION OF FRESHWATER, MARINE/ESTUARINE WATERS, SOILS, GROUND-WATERS, AND SEDIMENTS.

- Studies of transport and transformation processes in the surface and subsurface environment in order to predict the impact of surface conditions on ground-water systems and for use in the design, control, or clean-up of hazardous waste disposal sites, landfills, waste lagoons, land treatment operations, and other sources of ground-water contamination.
- Research is needed to identify and characterize the major transport, transformation and sorption/desorption mechanisms when wastes or other contaminants are introduced into soil systems that are intermittently saturated with water or other solvent materials, and likewise in saturated soil systems.
- Research directed toward understanding the kinetics of contaminant transport and transformation in the subsurface as a prerequisite to the development of techniques for predicting environmental exposure to these contaminants. Studies should include the relative importance of chemical, physical, and biological processes in transport phenomena, including plant uptake and growth.
- Research on the mechanism of and conditions for biological transformation in the subsurface including methods for identifying, characterizing and enumerating subsurface microorganisms.

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- Research directed toward characterizing subsurface properties as a scientific basis for determining subsurface processes, including determination of surface areas of geologic materials, characterization of such surfaces and delineation of chemical compositions of subsurface materials affecting various processes.
 - Studies of the transport and fate of toxic chemicals in lakes, rivers, and estuarine waters with emphasis on providing information required for use in predictive models.
 - Theoretical and experimental characterizations of adsorbing surfaces, the chemical nature of adsorbed species, the microbiological action at surfaces, and the environmental factors controlling the reaction rates of adsorbed species.
 - Studies of the transport of sediments, particularly fine-grained materials, flocculation and deflocculation of organic and inorganic materials, the mechanics of resuspension and deposition of particulates, and the modification by cohesive materials of turbulence as it affects resuspension and deposition.
 - Studies on the rates and mechanisms for abiotic transformations of toxic chemicals in natural waters with emphasis on the reactions involving naturally-occurring materials including humic substances, and inorganic species such as trace metals and hydrogen peroxide.
 - Development of predictive water quality models and techniques of varying complexity for application to toxic substances, nutrients, anoxic conditions, and resuspension of dredged material after aquatic disposal.
 - Develop more efficient numerical methods for the solution of mathematical models.
 - Develop formal mathematical procedures to assign uncertainty to estimates provided by models, and for comparing the results from models of different complexity.
 - Research in chemistry and physics to develop new measurement and monitoring techniques including instrumentation, for increasing sample through-put, sensitivity, and selectivity, and for field use.
 - Develop methods for identifying and quantifying non-volatile compounds in complex mixtures, adsorbed or complexed inorganic species and the complexing agents, for

separating and concentrating non-volatile organics adsorbed to other materials, and for new sensitive and selective detectors for gas and liquid chromatography.

- Develop new methods for screening a variety of samples for toxic substances and classes of organics and for monitoring waste streams.
- Develop geophysical monitoring techniques applicable to the measurement of flow and migration rates of groundwater and leachate and for monitoring contamination of estuarine and ocean areas receiving waste discharges.

For further information, please contact:

Louis G. Swaby, Ph.D.
Science Review Administrator (RD-675)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460
(202) 382-7445

Special Research Grant and Student Fellowship Program

Minority Institutions Assistance (MIA)

The U.S. Environmental Protection Agency has initiated a special assistance program entitled the Minority Institutions Assistance (MIA) program. The objective of the program is to award grant funds for the support of long-term exploratory research by faculty and to support undergraduate/graduate fellowships for students enrolled at eligible institutions. The principal purpose of this program is to provide Federal assistance to Historically Black Colleges and Universities (HBCU's) as directed by Executive Order 12320, issued on September 15, 1981.

Terms and Restrictions for Research Assistance

- Consideration will be given only to applications submitted by institutions subject to Executive Order No. 12320, and identified by the Secretary of the Department of Education as Historically Black Colleges and Universities.
- In contrast to the regular grants program, pre-application assistance is available upon request. A potential investigator may submit a preproposal for informal scientific review and determination of its relevance to Agency research goals.
- The Application Form (5700-12), instructions and procedures are the same as those used for EPA's regular research grants, except that "MIA" should be typed in item (3) on the face page to identify the program to which the application is directed.
- All of the topic areas described previously for the regular research grant program are applicable to the MIA program.

Terms and Restrictions for Fellowship Assistance

- Consideration will be given only to applicants who are enrolled and in good standing with an eligible institution (HBCU).
- The applicant must be a senior or graduate student with a cumulative Grade Point Average (GPA) of 3.0 or higher on a scale of 4.0.

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- All applications will be reviewed and evaluated for the following: (1) individual's orientation towards and commitment to a career in the Physical Sciences (Chemistry, Physics, Math, Engineering), Biological Sciences (human and non-human), Environmental Sciences, Computer Sciences; (2) grade point average (GPA) verified by college transcript; (3) applicants' statement of objectives and personal goals; (4) recommendations by the sponsor and faculty; and (5) employment experience related to the field of study.
 - These Special Fellowship applications must be properly executed on EPA Forms. Failure to complete all forms with appropriate signatures will delay processing or disqualify the application. Each application must enter "MIA" in the upper lefthand corner of the face page, EPA Form 5770-4.
 - Applicants must be citizens of the United States, or its possessions, the U.S. Virgin Islands or Puerto Rico.
 - The Environmental Protection Agency reserves the right to limit the number of awards to a particular college or university.

For further information, please contact:

Walter H. Preston, MIA Ombudsman (RD-675)
U.S. Environmental Protection Agency 401 M
Street, S.W. Washington, DC 20460 (202) 382-
7445
or Clyde C. Bishop, Jr. Science Review
Administrator

Appendix A:

Laboratories of The Office of Research and
Development, USEPA

Health Effects Research Laboratory
Research Triangle Park, NC 27711
(919) 541-2281

Environmental Monitoring Systems Laboratory
P.O. Box 15027
Las Vegas, NV 89114
(702) 798-2100

Water Engineering Research Laboratory
Cincinnati, OH 45268
(513) 569-7951

Environmental Research Laboratory
South Ferry Road
Narragansett, RI 02882
(401) 789-1071

Environmental Monitoring Systems Laboratory
Research Triangle Park, NC 27711
(919) 541-2106

Environmental Research Laboratory
Sabine Island
Gulf Breeze, FL 32561
(904) 932-5311

Hazardous Waste Engineering Research Laboratory
Cincinnati, OH 45268
(513) 569-7418

Environmental Monitoring and Support Laboratory
Cincinnati, OH 45268
(513) 569-7301

Environmental Research Laboratory
200 SW 35th Street
Corvallis, OR 97333
(503) 757-4601

Environmental Research Laboratory
College Station Road
Athens, GA 30613
(404) 546-3154

Environmental Research Laboratory
6201 Congdon Boulevard
Duluth, MN 55804
(218) 727-6692

Atmospheric Sciences Research Laboratory
Research Triangle Park, NC 27711
(919) 541-2191

Air and Energy Engineering Research Laboratory
Research Triangle Park, NC 27711
(919) 541-2821

Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 332-8800

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of Management and Budget through April
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